## In The Claims:

Please replace the original claim set with the following replacement claim set:

- 1. (Currently Amended) An ink comprising an aqueous vehicle, and dispersed particles of a silyl-terminated sulfopoly(ester-urethane), wherein said ink is an ink jet ink.
- 2. (Previously Amended) The ink of claim 1, wherein the silyl-terminated sulfopoly(ester-urethane) is described by the formula:

$$\begin{array}{c}
R \longrightarrow \left\{ \begin{matrix}
O \\
II \\
C - O - R^{D} - (X^{1} - R^{2})_{m} - (X^{1} - R^{H})_{n} - (X^{1} - R^{3})_{s} - X^{2} - R^{3} - Y \\
SO_{3}M \end{matrix} \right\}_{2}$$

wherein

R represents a trivalent  $C_6$  -  $C_{12}$  aryl group or a trivalent  $C_1$  -  $C_{20}$  aliphatic group wherein M is H<sup>+</sup>, an alkali metal cation, an alkaline earth metal cation, or a primary, secondary, tertiary, or quaternary ammonium cation;

each m independently represents 0 or 1, each n independently represents 0 or 1, each s independently represents 0 or 1, with the proviso that, at least one of m or n must be equal to 1;

each RD independently represents:

1) at least one of a divalent linear or branched organic group of 20 to 150 carbon atoms in units of 2 to 12 methylene groups and arylene groups of 6 to 10 carbon atoms separated by at least one of 1 to 50 catenary oxygen atoms and by 1 to 30 oxycarbonyl groups,

$$\left(\begin{array}{c} -O - C \\ \end{array}\right)$$

2) an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to

four lower alkyl groups having 1 to 4 carbon atoms and a total of up to 15 carbon atoms, which organic group can be chain extended by a transesterification reaction between a diol terminated ester precursor and a lower aliphatic diester of an aliphatic diacid having from 2 to 12 carbons or an aromatic diacid having from 8 to 12 carbons or reaction between a diol terminated ester precursor and an aliphatic lactone of 4 to 6 carbons, or

3) the structure  $\{-R^1(X^1-R^2-X^1-R^1)_{p^-}\}$  where p is an integer from 1 to 5, produced by the reaction of a polyol with an isocyanate having the structure OCN-R<sup>2</sup>-NCO to produce a segment having a molecular weight of from 500 to 4,000;

each  $R^1$  independently represents a linear or branched alkylene group having 2 to 12 carbon atoms, or an arylene group having 6 to 10 carbon atoms;

each X1 independently represents

each R<sup>2</sup> independently represents an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of at most 15 carbon atoms;

each X<sup>2</sup> independently represents

wherein each R<sup>A</sup> independently represents hydrogen, lower alkyl having 1 to 4 carbon atoms, or R<sup>1</sup>-Y;

each  $R^{\mathbf{H}}$  independently represents a divalent hydrophobic group selected from divalent oligomeric siloxanes having the structure

$$-R^{3} - (\underset{R}{\overset{R^{5}}{\underset{\text{SiO}}{|g|}}} R^{3} - \underset{R^{5}}{\overset{R^{5}}{\underset{\text{SiO}}{|g|}}} R^{3}$$

divalent organic groups having the structure

$$-R^{3}-N-R^{3} X^{3}$$
 $A^{1}$ 
 $A^{1}$ 
 $A^{1}$ 

or divalent organic groups having one of the structures

or quaternary salts thereof, wherein

each R<sup>3</sup> independently represents a divalent linear or branched alkylene group having 2 to 12 carbon atoms, or a divalent arylene or alkarylene group having 6 to 20 carbon atoms;

each Y independently represents H, an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 10 carbon atoms, or

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

wherein each  $R^4$  independently represents a monovalent lower alkyl group having from 1 to 4 carbon atoms, each  $R^8$  is H or a monovalent lower alkyl group having from 1 to 4 carbon

atoms, each z is independently 2 or 3, each w is independently 0 or 1, and wherein z + w = 3, with the proviso that at least one Y has the formula

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

each R<sup>5</sup> independently represents a monovalent group selected from the group consisting of alkyl groups of 1 to 12 carbon atoms, aryl having 6 to 10 carbon atoms, or aralkyl groups having 6 to 10 carbon atoms, with at least 70 percent of R<sup>4</sup> being methyl;

each g independently represents an integer of from 10 to 300;

each X<sup>3</sup> independently represents a covalent bond, a carbonyl group,

$$\begin{pmatrix} C \\ H \\ O \end{pmatrix}$$

or a divalent amido group

$$\left(\begin{array}{c} O \\ \parallel \\ C-NH \end{array}\right)$$
;

each  $R^6$  independently represents a monovalent group selected from the group consisting of alkyl groups of about 4 to about 60 carbon atoms;

each R<sup>7</sup> independently represents a divalent group selected from the group consisting of alkylene groups of 2 to about 12 carbon atoms; and

each  $R_f$  independently represents a monovalent saturated fluoroaliphatic group having 6 to 12 carbon atoms, at least four of which are fully-fluorinated carbon atoms.

- 3. (Previously Amended) The ink of claim 1, wherein the ink is free of organic solvents.
- 4. (Previously Amended) The ink of claim 1, further comprising a colorant, wherein the colorant is a pigment.
- 5. (Previously Amended) The ink of claim 1, further comprising a colorant, wherein the colorant is a dye.

- 6. (Previously Presented) The ink of claim 1, further comprising an additional dispersed polymer.
- 7. (Previously Presented) The ink of claim 6, wherein the additional dispersed polymer is present in an amount of from about 0.1 to about 3 times the weight of the silyl-terminated sulfopoly(ester-urethane) polymer.
- 8. (Previously Presented) The ink of claim 7, wherein the additional dispersed polymer is an acrylic polymer.
  - 9. (Previously Presented) The ink of claim 1, further comprising a humectant.
- 10. (Currently Amended) The ink of claim 1, wherein the <u>ink has a solids content is of</u> at least 20 weight percent of the total ink composition.
- 11. (Currently Amended) The ink of claim 1, wherein the <u>ink has a solids content is of</u> at least 30 weight percent of the total ink composition.
- 12. (Currently Amended) The ink of claim 1, wherein the <u>ink has a solids content is of</u> at least 50 weight percent of the total ink composition.
- 13. (Previously Presented) The ink of claim 1, wherein the ink has a viscosity of less than about 20 mPa·s at 20  $^{\circ}$ C and at a shear rate of 1000 s<sup>-1</sup>.
- 14. (Previously Presented) The ink of claim 1, wherein the ink has a viscosity of less than about 5 mPa·s at 20 °C and at a shear rate of 1000 s<sup>-1</sup>.

15. (Previously Presented) The ink of claim 2, wherein

is:

$$\begin{array}{c} O \\ O \\ C \\ C \\ \end{array}$$

$$\begin{array}{c} O \\ C \\$$

and wherein each  $R^9$  independently represents a linear or branched alkylene group having 2 to 12 carbon atoms, an arylene group having 6 to 10 carbon atoms, or may also comprise an oligomeric segment.

- 16. (Previously Amended) The ink of claim 15, wherein the ink is contained within an ink jet printer cartridge.
- 17. (Currently Amended) A blendable ink set comprising at least three blendable inks, wherein each ink in the ink set comprises the ink of claim 1.

- 18. (Currently Amended) The ink set of claim 17, wherein the blendable inks eonsist of comprise yellow, magenta, and cyan inks.
- 19. (Previously Presented) The ink set of claim 17, further comprising a fourth blendable ink.
- 20. (Previously Presented) The ink set of claim 19, wherein the fourth blendable ink is a black ink.
- 21. (Previously Presented) The ink set of claim 19, further comprising a fifth blendable ink.
- 22. (Previously Presented) The ink set of claim 21, wherein the fifth blendable ink is a white ink.
- 23. (Previously Presented) The ink of claim 1, wherein the ink is contained within an ink jet printer cartridge.
- 24. (Currently Amended) A method of imaging a substrate, said method comprising ink jet printing an aqueous composition onto a substrate, wherein the aqueous composition comprises an aqueous vehicle and a silyl-terminated sulfopoly(ester-urethane) having the formula:

$$\begin{array}{l}
R \longrightarrow \left\{ \begin{array}{l}
O \\
II \\
C - O - R^{D} - (X^{1} - R^{2})_{m} - (X^{1} - R^{H})_{n} - (X^{1} - R^{3})_{s} - X^{2} - R^{3} - Y \end{array} \right\}_{2}$$

wherein

R represents a trivalent  $C_6$  -  $C_{12}$  aryl group or a trivalent  $C_1$  -  $C_{20}$  aliphatic group wherein M is H<sup>+</sup>, an alkali metal cation, an alkaline earth metal cation, or a primary, secondary, tertiary, or quaternary ammonium cation;

each m independently represents 0 or 1, each n independently represents 0 or 1, each s independently represents 0 or 1, with the proviso that, at least one of m or n must be equal to 1;

each RD independently represents:

1) at least one of a divalent linear or branched organic group of 20 to 150 carbon atoms in units of 2 to 12 methylene groups and arylene groups of 6 to 10 carbon atoms separated by at least one of 1 to 50 catenary oxygen atoms and by 1 to 30 oxycarbonyl groups,

$$\left(\begin{array}{c} -o-c \\ 0 \end{array}\right)$$

- 2) an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of up to 15 carbon atoms, which organic group can be chain extended by a transesterification reaction between a diol terminated ester precursor and a lower aliphatic diester of an aliphatic diacid having from 2 to 12 carbons or an aromatic diacid having from 8 to 12 carbons or reaction between a diol terminated ester precursor and an aliphatic lactone of 4 to 6 carbons, or
- 3) the structure  $\{-R^1(X^1-R^2-X^1-R^1)_p-\}$  where p is an integer from 1 to 5, produced by the reaction of a polyol with an isocyanate having the structure OCN-R<sup>2</sup>-NCO to produce a segment having a molecular weight of from 500 to 4,000;

each  $R^1$  independently represents a linear or branched alkylene group having 2 to 12 carbon atoms, or an arylene group having 6 to 10 carbon atoms;

each X1 independently represents

each R<sup>2</sup> independently represents an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of at most 15 carbon atoms;

each  $X^2$  independently represents

wherein each R<sup>A</sup> independently represents hydrogen, lower alkyl having 1 to 4 carbon atoms, or R<sup>1</sup>-Y;

each  $R^{\mathbf{H}}$  independently represents a divalent hydrophobic group selected from divalent oligomeric siloxanes having the structure

$$-R^{3} - (SiO)_{\overline{g}} R^{3}$$
,

divalent organic groups having the structure

$$-R^{3}-N-R^{3}-X^{3}-X^{6}$$

or divalent organic groups having one of the structures

or quaternary salts thereof, wherein

each R<sup>3</sup> independently represents a divalent linear or branched alkylene group having 2 to 12 carbon atoms, or a divalent arylene or alkarylene group having 6 to 20 carbon atoms:

each Y independently represents H, an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 10 carbon atoms, or

$$-\mathrm{Si}(\mathrm{OR}^8)_{\mathrm{z}}(\mathrm{R}^4)_{\mathrm{w}}$$

wherein each  $R^4$  independently represents a monovalent lower alkyl group having from 1 to 4 carbon atoms, each  $R^8$  is H or a monovalent lower alkyl group having from 1 to 4 carbon atoms, each z is independently 2 or 3, each w is independently 0 or 1, and wherein z + w = 3, with the proviso that at least one Y has the formula

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

each R<sup>5</sup> independently represents a monovalent group selected from the group consisting of alkyl groups of 1 to 12 carbon atoms, aryl having 6 to 10 carbon atoms, or aralkyl groups having 6 to 10 carbon atoms, with at least 70 percent of R<sup>4</sup> being methyl;

each g independently represents an integer of from 10 to 300;

each X<sup>3</sup> independently represents a covalent bond, a carbonyl group,

$$\begin{pmatrix} C \\ H \\ O \end{pmatrix}$$

or a divalent amido group

$$\begin{pmatrix} O \\ II \\ C-NH \end{pmatrix}$$

each  $R^6$  independently represents a monovalent group selected from the group consisting of alkyl groups of about 4 to about 60 carbon atoms;

each R<sup>7</sup> independently represents a divalent group selected from the group consisting of alkylene groups of 2 to about 12 carbon atoms; and

each  $R_f$  independently represents a monovalent saturated fluoroaliphatic group having 6 to 12 carbon atoms, at least four of which are fully-fluorinated carbon atoms.

- 25. (Previously Presented) The method of claim 24, wherein the composition further comprises a colorant.
- 26. (Previously Presented) The method of claim 24, wherein the composition further comprises an additional dispersed polymer.
- 27. (Previously Presented) The method of claim 24, wherein the composition further comprises a humectant.
- 28. (Currently Amended) The method of claim 24, wherein the ink jet printing step comprises piezo ink jet printing.
  - 29. (Previously Presented) The method of claim 24, wherein the substrate is a fabric.
  - 30. (Previously Presented) The method of claim 29, wherein the fabric is a textile.
  - 31. (Previously Presented) The method of claim 24, wherein the substrate is glass.
- 32. (Previously Presented) The method of claim 24, wherein the substrate is a polymer film.

- 33. (Previously Presented) The method of claim 32, wherein the polymer film is a laminate.
  - 34. (Previously Presented) The method of claim 24, wherein the substrate is paper.
- 35. (Previously Presented) An article comprising a substrate imaged according to the method of claim 24.
- 36. (Currently Amended) An ink comprising an aqueous vehicle, <u>a</u> colorant, and at least 20 weight percent <u>of</u> dispersed shear deformable polymer particles, wherein the polymer is self-crosslinking, and wherein the ink is an ink jet ink.
- 37. (Previously Presented) The ink of claim 36, wherein the polymer particles comprise silyl-terminated polymers.
- 38. (Currently Amended) The ink of claim 36, wherein the polymer particles comprise greater than 25 weight percent of the eomposition ink.
- 39. (Currently Amended) The ink of claim 36, wherein the polymer particles comprise greater than 30 weight percent of the eomposition ink.
- 40. (Previously Presented) The ink of claim 36, further comprising a dispersed polymer that is not shear deformable.
- 41. (Currently Amended) The ink of claim 36, wherein the composition further comprises comprising a humectant.
- 42. (Currently Amended) A method of imaging a substrate, said method comprising ink jet printing an aqueous composition on a substrate, wherein the aqueous composition comprising

an aqueous vehicle, and at least 20 weight percent of dispersed shear deformable particles, wherein the polymer is comprising a self-crosslinking polymer.

## 43. (Previously Cancelled)

- 44. (Currently Amended) The method of claim 42, wherein the polymer particles comprise silyl-terminated polymers.
- 45. (Currently Amended) The method of claim 42, wherein the aqueous composition further comprises a colorant.
- 46. (Currently Amended) The method of claim 45, wherein the colorant comprises  $\underline{a}$  pigment.
- 47. (Previously Amended) The method of claim 42, wherein the aqueous vehicle comprising from 75 to 100 percent by weight water based on a total weight of the aqueous vehicle.
- 48. (Currently Amended) The method of claim 47, wherein the aqueous composition further comprises a pigment.
- 49. (Previously Presented) The ink of claim 37, wherein the silyl-terminated polymers are represented by a formula:

$$\begin{array}{c}
R \longrightarrow \left\{ \begin{matrix} O \\ II \\ C - O - R^{D} - (X^{1} - R^{2})_{m} - (X^{1} - R^{H})_{n} - (X^{1} - R^{3})_{s} - X^{2} - R^{3} - Y \\ SO_{3}M \end{matrix} \right\}_{2}$$

wherein

R represents a trivalent  $C_6$  -  $C_{12}$  aryl group or a trivalent  $C_1$  -  $C_{20}$  aliphatic group wherein M is  $H^+$ , an alkali metal cation, an alkaline earth metal cation, or a primary, secondary, tertiary, or quaternary ammonium cation;

each m independently represents 0 or 1, each n independently represents 0 or 1, each s independently represents 0 or 1, with the proviso that, at least one of m or n must be equal to 1;

each RD independently represents:

1) at least one of a divalent linear or branched organic group of 20 to 150 carbon atoms in units of 2 to 12 methylene groups and arylene groups of 6 to 10 carbon atoms separated by at least one of 1 to 50 catenary oxygen atoms and by 1 to 30 oxycarbonyl groups,

$$\left(\begin{array}{c} -O-C-\\ \end{array}\right)$$

- 2) an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of up to 15 carbon atoms, which organic group can be chain extended by a transesterification reaction between a diol terminated ester precursor and a lower aliphatic diester of an aliphatic diacid having from 2 to 12 carbons or an aromatic diacid having from 8 to 12 carbons or reaction between a diol terminated ester precursor and an aliphatic lactone of 4 to 6 carbons, or
- 3) the structure  $\{-R^1(X^1-R^2-X^1-R^1)_{p^-}\}$  where p is an integer from 1 to 5, produced by the reaction of a polyol with an isocyanate having the structure OCN-R<sup>2</sup>-NCO to produce a segment having a molecular weight of from 500 to 4,000;

each R<sup>1</sup> independently represents a linear or branched alkylene group having 2 to 12 carbon atoms, or an arylene group having 6 to 10 carbon atoms;

each X1 independently represents

each R<sup>2</sup> independently represents an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of at most 15 carbon atoms;

each X<sup>2</sup> independently represents

wherein each  $R^A$  independently represents hydrogen, lower alkyl having 1 to 4 carbon atoms, or  $R^1$ -Y;

each  $R^{H}$  independently represents a divalent hydrophobic group selected from divalent oligomeric siloxanes having the structure

$$-R^{3} - (SiO)_{\overline{g}} R^{3} - ,$$

divalent organic groups having the structure

$$-R^{3}-N-R^{3} X^{3}$$
 $K^{1}$ 
 $K^{6}$ 

or divalent organic groups having one of the structures

$$-R^{3}-N-R^{3}-$$
,  $-R^{3}-N-R^{3}-$ ,  $R_{f}^{3}-N-R^{3}-$ ,  $R_{f}^{3}-$ 

or quaternary salts thereof, wherein

each R<sup>3</sup> independently represents a divalent linear or branched alkylene group having 2 to 12 carbon atoms, or a divalent arylene or alkarylene group having 6 to 20 carbon atoms;

each Y independently represents H, an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 10 carbon atoms, or

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

wherein each  $R^4$  independently represents a monovalent lower alkyl group having from 1 to 4 carbon atoms, each  $R^8$  is H or a monovalent lower alkyl group having from 1 to 4 carbon atoms, each z is independently 2 or 3, each w is independently 0 or 1, and wherein z + w = 3, with the proviso that at least one Y has the formula

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

each R<sup>5</sup> independently represents a monovalent group selected from the group consisting of alkyl groups of 1 to 12 carbon atoms, aryl having 6 to 10 carbon atoms, or aralkyl groups having 6 to 10 carbon atoms, with at least 70 percent of R<sup>4</sup> being methyl;

each g independently represents an integer of from 10 to 300;

each X<sup>3</sup> independently represents a covalent bond, a carbonyl group,

$$\begin{pmatrix} C \\ C \\ C \end{pmatrix}$$

or a divalent amido group

$$\left(\begin{array}{c} O \\ II \\ C-NH \end{array}\right)$$

each  $R^6$  independently represents a monovalent group selected from the group consisting of alkyl groups of about 4 to about 60 carbon atoms;

each  $\mathbb{R}^7$  independently represents a divalent group selected from the group consisting of alkylene groups of 2 to about 12 carbon atoms; and

each R<sub>f</sub> independently represents a monovalent saturated fluoroaliphatic group having 6 to 12 carbon atoms, at least four of which are fully-fluorinated carbon atoms.

- 50. (Previously Presented) The ink of claim 36, wherein the ink has a viscosity of less than about 20 mPa·s at 20 °C and at a shear rate of 1000 s<sup>-1</sup>.
  - 51. (Previously Presented) The ink of claim 36, further comprising a humectant.
- 52. (Previously Presented) The method of claim 44, wherein the silyl-terminated polymers are represented by a formula:

$$\begin{array}{l}
R \longrightarrow \left\{ \begin{array}{l}
O \\
II \\
C - O - R^{D} - (X^{I} - R^{2})_{m} - (X^{I} - R^{H})_{n} - (X^{I} - R^{3})_{s} - X^{2} - R^{3} - Y \\
SO_{3}M \end{array} \right\}_{2}$$

wherein

R represents a trivalent  $C_6$  -  $C_{12}$  aryl group or a trivalent  $C_1$  -  $C_{20}$  aliphatic group wherein M is H<sup>+</sup>, an alkali metal cation, an alkaline earth metal cation, or a primary, secondary, tertiary, or quaternary ammonium cation;

each m independently represents 0 or 1, each n independently represents 0 or 1, each s independently represents 0 or 1, with the proviso that, at least one of m or n must be equal to 1;

each RD independently represents:

1) at least one of a divalent linear or branched organic group of 20 to 150 carbon atoms in units of 2 to 12 methylene groups and arylene groups of 6 to 10 carbon atoms separated by at least one of 1 to 50 catenary oxygen atoms and by 1 to 30 oxycarbonyl groups,

$$\left(\begin{array}{c} O \\ -O - C \end{array}\right)$$

- 2) an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of up to 15 carbon atoms, which organic group can be chain extended by a transesterification reaction between a diol terminated ester precursor and a lower aliphatic diester of an aliphatic diacid having from 2 to 12 carbons or an aromatic diacid having from 8 to 12 carbons or reaction between a diol terminated ester precursor and an aliphatic lactone of 4 to 6 carbons, or
- 3) the structure  $\{-R^1(X^1-R^2-X^1-R^1)_p^-\}$  where p is an integer from 1 to 5, produced by the reaction of a polyol with an isocyanate having the structure OCN-R<sup>2</sup>-NCO to produce a segment having a molecular weight of from 500 to 4,000;

each R<sup>1</sup> independently represents a linear or branched alkylene group having 2 to 12 carbon atoms, or an arylene group having 6 to 10 carbon atoms;

each X<sup>1</sup> independently represents

each R<sup>2</sup> independently represents an organic group selected from the group consisting of a linear or branched alkylene group having 2 to 12 carbon atoms, a cyclopentamethylene group, a cyclohexamethylene group, a 5- or 6-membered azacyclic group, a phenylene group, a naphthalene group, a phenylenemethylenephenylene group, the organic group optionally being substituted by up to four lower alkyl groups having 1 to 4 carbon atoms and a total of at most 15 carbon atoms;

each X<sup>2</sup> independently represents

wherein each  $R^A$  independently represents hydrogen, lower alkyl having 1 to 4 carbon atoms, or  $R^1$ -Y;

each  $R^H$  independently represents a divalent hydrophobic group selected from divalent oligomeric siloxanes having the structure

$$-R^{3} - (SiO)_{\overline{g}} R^{3} - R^{5}$$

divalent organic groups having the structure

$$-R^{3}-N-R^{3}-X^{3}-X^{6}$$

or divalent organic groups having one of the structures

$$-R^{3}-N-R^{3}-$$
,  $-R^{3}-N-R^{3}-$ ,  $R_{f}^{3}-N-R^{3}-$ ,  $R_{f}^{3}-$ 

or quaternary salts thereof, wherein

each R<sup>3</sup> independently represents a divalent linear or branched alkylene group having 2 to 12 carbon atoms, or a divalent arylene or alkarylene group having 6 to 20 carbon atoms;

each Y independently represents H, an alkyl group having from 1 to 20 carbon atoms, an aryl group having from 6 to 10 carbon atoms, or

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{z}}(\operatorname{R}^4)_{\operatorname{w}}$$

wherein each  $R^4$  independently represents a monovalent lower alkyl group having from 1 to 4 carbon atoms, each  $R^8$  is H or a monovalent lower alkyl group having from 1 to 4 carbon atoms, each z is independently 2 or 3, each w is independently 0 or 1, and wherein z + w = 3, with the proviso that at least one Y has the formula

$$-\operatorname{Si}(\operatorname{OR}^8)_{\operatorname{Z}}(\operatorname{R}^4)_{\operatorname{W}}$$

each R<sup>5</sup> independently represents a monovalent group selected from the group consisting of alkyl groups of 1 to 12 carbon atoms, aryl having 6 to 10 carbon atoms, or aralkyl groups having 6 to 10 carbon atoms, with at least 70 percent of R<sup>4</sup> being methyl;

each g independently represents an integer of from 10 to 300;

each X<sup>3</sup> independently represents a covalent bond, a carbonyl group,

$$\begin{pmatrix} C \\ C \\ \end{pmatrix}$$

or a divalent amido group

$$\begin{pmatrix} O \\ II \\ C-NH \end{pmatrix}$$
;

each R<sup>6</sup> independently represents a monovalent group selected from the group consisting of alkyl groups of about 4 to about 60 carbon atoms;

each R<sup>7</sup> independently represents a divalent group selected from the group consisting of alkylene groups of 2 to about 12 carbon atoms; and

each  $R_f$  independently represents a monovalent saturated fluoroaliphatic group having 6 to 12 carbon atoms, at least four of which are fully-fluorinated carbon atoms.